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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,112	09/28/2005	Susumu Yasuda	03500.017988.	4322

5514 7590 08/01/2006

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EXAMINER

BENSON, WALTER

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/551,112

Applicant(s)

YASUDA ET AL.

Examiner

Walter Benson

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-16 are canceled.
2. Claims 17-32 are presented for examination.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 17-28 and 30-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Yasuda et al. (US Patent No. 6,965,239).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Art Unit: 2858

5. As to claim 17, Yasuda discloses a potential sensor comprising:

first and second detection electrodes opposed to a potential-measured object a potential of which is to be measured (col. 3, lines 57-59 and col. 5, lines 35-38);

a movable shutter positioned between the detection electrodes and the potential-measured object with gaps thereto (col. 5, lines 39-44);

where the movable shutter is configured to assume a first state and a second state, the first detection electrode being entirely exposed and the second detection electrode being entirely masked when the movable shutter assumes the first state [col. 5, lines 65-67 and col. 6, lines 1-5), and the first detection electrode being entirely masked and the second detection electrode being entirely exposed when the movable shutter assumes the second state (col. 5, lines 8-18).

6. As to claim 18, Yasuda discloses a potential sensor comprising:

where the movable shutter is elastically supported to be movable between the first state and the second state (col. 3, lines 47-50 and 57-59).

7. As to claim 19, Yasuda discloses a potential sensor comprising:

where a drive frequency of the potential sensor is substantially equal to a mechanical resonance frequency of the movable shutter. (col. 9, lines 1-4).

8. As to claim 20, Yasuda discloses a potential sensor comprising:

where the movable shutter is configured to be controlled by magnetic-field generation

Art Unit: 2858

means, which generates a magnetic field substantially perpendicular to a movable direction of said movable shutter, and current application means, which supplies said movable shutter with a current substantially perpendicular to the movable direction of said movable shutter and to a direction of the magnetic field, thereby causing the movable shutter to assume the first state and the second state (col. 3, lines 21-26).

9. As to claim 21, Yasuda discloses a potential sensor comprising:
where the magnetic field generation means is a permanent magnet or an electromagnetic coil (col. 3, lines 26-27).
10. As to claim 22, Yasuda discloses a potential sensor further comprising:
one or more addition movable shutters and at least one additional current application means, which supplies said movable shutters with currents substantially perpendicular to the moving directions of the movable shutters, whereby the first state and the second state are assumed by an interaction of the currents supplied to the movable shutters (col. 3, lines 30-36).
11. As to claim 23, Yasuda discloses a potential sensor comprising:
where the first and second detection electrodes are disposed adjacent each other at an interval so as not to short electrically (col. 8, lines 1-3).
12. As to claim 24, Yasuda discloses a potential sensor comprising:

where the shutter is comprised of an actuator (col. 3, lines 6-9).

13. As to claim 25, Yasuda discloses a potential sensor comprising:

plural detection electrodes disposed adjacent each other (col. 4, lines 7-9);

plural movable shutters each of which is individually actuated to mask or expose the plural detection electrodes selectively, at least one of the plural movable shutters being activated so as to expose a first detection electrode of the plural detection electrodes and mask a second detection electrode of the plural detection electrodes, which is adjacent to the first detection electrode, at a first state, and so as to expose the second detection electrode and mask the first detection electrode at a second state (col. 3, lines 62-67 and col. 4, lines 1-7).

14. As to claim 26, Yasuda discloses a potential sensor comprising:

where the plural movable shutters include three or more movable shutters arranged in a juxtaposition such that a movable shutter not located on an edge of the juxtaposition masks at least one of the plural detection electrodes in the first state or the second state (col. 4, lines 31-35).

15. As to claims 27, 30, and 32, Yasuda discloses a potential sensor comprising:

a substrate (col. 4, line 14);

first and second detection electrode assemblies provided on the substrate, at least one of the assemblies being formed in plural parts (col. 4, lines 14-17);

Art Unit: 2858

a movable shutter provided between the detection electrode assemblies with a gap thereto (col. 4, lines 17-19);

where the first detection electrode assembly is exposed to a potential-measured object wider when said movable shutter assumes a first state than when said movable shutter assumes a second state, and the second detection electrode assembly is exposed to the potential-measured object narrower when said movable shutter assumes the first state than when said movable shutter assumes the second state (col. 4, lines 20-26);

further as to claim 32, Yasuda teaches a step of switching the movable shutter between the first state and the second state, and measuring a potential of the potential-measured object based on a change in an electrostatic capacitance generated between the first and second electrodes and the potential-measured object (col. 7, lines 17-23).

16. As to claim 28, Yasuda discloses a potential sensor comprising:

where in the plurality of sensor units at least two detection electrodes exposed and at least two detection electrodes masked to the potential-measured object respectively in the first state of the movable shutters are electrically connected to each other, respectively (col. 6, lines 45-52).

17. As to claim 31, Yasuda discloses a potential sensor comprising:

a potential sensor according to claim 17; and image forming means configured to control an image formation based on an output of said potential sensor (col. 4, lines 37-41).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al. as applied to claim 27 above, and further in view of Werner, Jr. et al. (US Patent No. 6,806,717 and Werner, Jr. hereinafter).

Although the system disclosed by Yasuda shows substantial features of the claimed invention (discussed in the paragraphs above), it fails to disclose:

where the plurality of sensor units are arranged in an array.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Yasuda, as evidenced by Werner, Jr.

Werner, Jr. discloses an electrostatic potential sensors having:

where the plurality of sensor units are arranged in an array.(col. 10, lines 5-10).

Given the teaching of Werner, Jr., a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Yasuda by employing the well known or conventional features of measuring potential, such as disclosed by Werner, Jr., in order to efficiently measure irregular surfaces with high accuracy in the Yasuda device.

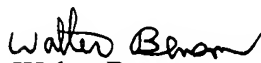
Art Unit: 2858

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter Benson whose telephone number is (571) 272-2227. The examiner can normally be reached on Mon to Fri 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Walter Benson
Primary Examiner

July 24, 2006